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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,528	03/03/2005	Serge Valette	007875-0310447	7143

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EXAMINER
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KIM, ELLEN E

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/501,528	VALETTE, SERGE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ellen Kim	2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected..
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/16/04</u> . | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 1-7, 9-10, and 12 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Fernandez et al [USPAT 6,445,840].**

Fernandez et al disclose an optical switching comprising at least one input optical path [input fibers in fig. 13] and at least a first and a second output optical paths [two sets of output fibers in fig. 13] and a micromirror 1320, the input optical path and the first output optical path having an identical optical axis, called first optical axis, and the second output optical path having an optical axis called second optical axis, the micromirrors comprising a reflector part and an actuating part [fig. 7] having an axis of rotation and able to drive the reflector part in rotation about a plane called a tilt plane, the first and second optical axes respectively forming an angle, the optical switch further comprising a control device, this control device comprising a first set of electrodes [see claim 1].

Fernandez et al do not specifically teach the use of the second set of electrodes, however, it is inherent to have a second set of electrodes in the device so that the actuator of the micromirror can function in the device.

In re claims 2 and 3, more independent input and output optical paths are shown in fig. 13.

In re claim 4, recesses are shown in fig. 6a, 7, and 8.

In re claim 5, the angle is almost 90 degrees.

In re claim 6, plurality of electrodes are utilized for plurality of micromirrors.

In re claim 7, the limit stop is clearly shown in fig. 6a, 7, and 8. The substrate inherently functions as a limit stop.

With respect to method claims, most of the claimed method steps are inherently shown by Fernandez et al's device.

In re claim 9, Fernandez et al clearly show in fig. 1A, 4, and 9 that the plurality of substrates are utilized in the device.

In re claim 10, Fernandez et al show in fig. 4 three different layers.

In re claim 13, Fernandez et al clearly teach at columns 2, line 44- column 3, line 8 that the etching method is well known in the art for micromirrors.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 8, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fernandez et al.**

In re claim 8, Fernandez et al disclose every aspect of claimed invention except for the boss at one end of the reflector part, and the width of the boss in a plane perpendicular to the tilt plane being greater than the width of the recess along the same plane.

It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify Fernandez et al's device to include a boss having a width in a plane perpendicular to the tilt plane being greater than the width of the recess along the same plane for the purpose of limiting the maximum rotation angle of the

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micromirror in the device. It would improve the device by controlling the micromirror more precisely, and preventing any breakage of the micromirrors in the device.

In re claims 11 and 12, Fernandez et al teach at column 2, lines 44-end that silicon layers are used, however, fail to disclose the silicon oxide layer.

It would have been obvious to the ordinary skilled person in the art at the time the invention was made to modify to include the silicon oxide material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

### ***Conclusion***

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

For all official patent application related correspondence for organizations reporting to the Commissioner of Patents:

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- Correspondence that is transmitted by facsimile must be directed to the central facsimile number, (703) 872-9306.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Further references of interest are cited on Form PLO-892, which is attachment to this office action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen Kim whose telephone number is (571) 272-2349. The examiner can normally be reached on Monday through Thursday.

Ellen E. Kim

Primary Examiner

September 9, 2005/EK

A handwritten signature in black ink, appearing to be 'E. Kim', written in a cursive style.